

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty) (PCT Article 36 and Rule 70)

Applicant's or agent's file reference S-27	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP2005/009007	International filing date (<i>day/month/year</i>) 11.05.2005	Priority date (<i>day/month/year</i>) 11.05.2004
International Patent Classification (IPC) or national classification and IPC Int.Cl. F28F9/22 (2006.01), B60H1/32 (2006.01), F25B39/02 (2006.01), F28D1/053 (2006.01), F28F9/02 (2006.01)		
Applicant SHOWA DENKO K.K.		

1.	This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.
3.	This report is also accompanied by ANNEXES, comprising: <div style="margin-left: 20px;"> a. <input type="checkbox"/> a total of _____ sheets, as follows: <div style="margin-left: 20px;"> <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. </div> </div> b. <input type="checkbox"/> a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4.	This report contains indications relating to the following items: <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application </div>

Date of submission of the demand 31.10.2005	Date of completion of this report 16.03.2006
Name and mailing address of the IPEA/JP Japan Patent Office 3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan	Authorized officer SHOJI Hidefumi Telephone No. +81-3-3581-1101 Ext. 3377

Box No. I Basis of the report

1. With regard to the **language**, this report is based on:

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rules 12.3(a) and 23.1(b))
- ☐ publication of the international application (Rule 12.4(a))
- ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

- ☒ the international application as originally filed/furnished
- ☐ the description:
- pages _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ the claims:
- Nos. _____ as originally filed/furnished
- Nos.* _____ as amended (together with any statement) under Article 19
- Nos.* _____ received by this Authority on _____
- Nos.* _____ received by this Authority on _____
- ☐ the drawings:
- sheets/figs _____ as originally filed/furnished
- sheets/figs * _____ received by this Authority on _____
- sheets/figs * _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2005/009007

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement

APTT Rec'd PCT/PTO 27 JUL 2006

1. Statement

Novelty (N)	Claims	1-26	YES
	Claims		NO
Inventive step (IS)	Claims	1-26	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-26	YES
	Claims		NO

2. Citations and explanations(Rule 70.7)

Document 1

JP 05-346297 A (Nihon Keikinzoku K.K.) 1993.12.27, figure 4

Document 2

JP 05-096784 U (Nihon Kentetsu K.K.) 1993.12.27, figure 3

Document 3

JP 10-220989 A (Nihon Keikinzoku K.K.) 1998.08.21, figure 2

None of the prior art documents cited in the international search report describes the subject matters of claim 1-26, particularly, the technical feature of "the inflow intermediate header and the outflow intermediate header being held in communication each at one end thereof", and it was not obvious for the person skilled in the art to employ it with a heat exchanger.